

NOTES ON THE SPECIES OF ERYTHRINA. VIII.

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Introduction

Since the last of this series of papers was submitted for publication many new collections have been examined and 221 cited in this paper. Extensions of range are noted for 15 species. One species (E. santamartensis Krukoff & Barneby) is described as new.

My taxonomical studies of Erythrina are coming to the end. Few new species might be yet expected from the high peaks of Central America, particularly Nicaragua. I do not expect many changes in the nomenclature except in the varieties of E. brevipflora and E. velutina also in the forms of E. corallodendrum. These changes are best made when the contemplated biosystematic studies to be carried in Hawaii are on the way. Studies of the genus will be continued. Eight papers covering the morphology, distribution, chromosomes, palynology, alkaloids and amino acids of Erythrina were published in September and December issues of Lloydia in 1974. A supplement to this Symposium is projected for publishing late in 1976 or early 1977. This will cover vegetative anatomy, seeds and embryos, seedlings and various other subjects. It is also projected to investigate the biosystematics of the genus in detail. A comprehensive collection of the genus has been assembled in two places in Hawaii and this seems to be an ideal area to conduct these studies.

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1. Erythrina fusca Loureiro, Fl. Cochinch. 427. 1790.

Belize: 11-1/2 mi NW of Belize, John D. Dwyer 10741 (MO).
Guatemala: Izabal: Mariscos, Harmon & Fuentex 2057.
Honduras: Mosquitea: Gracias a Dios, C. Nelson & M. Hernandez 0959 (EAP). Costa Rica: Guanacaste: along Rio Tempique, Davidse 1452. Panama: Panama: John M. Osorio 44 (MO).
Venezuela: Merida: alt. +1650 m, Breteler 3243 (MO).
Colombia: Tolima: alt. + 420 m, Gentry et al. 8965 (MO);
Huila: Gentry et al. 9005 (MO); Amazonas: Plowman 3228 (COL).
Brazil: Para: Ilha de Marajo, E. Oliveira 5069 (IAN);
Amazonas: basin of Rio Solimoes, Prance et al. 17308
(Tabatinga), 17420 (San Antonio de Ica). Peru: Loreto:
Iquitos, F. Ayala 0408. Ecuador: Los Rios: MacBryde 420.
Ceylon: Jayasuriya et al. 1411 (MO). New Hebrides: Espirito Santo, J. Raynal & A. Gullison 16418.

Five collections of this species from the Panama Canal Zone deposited at Duke were examined. They are not cited here, as this species is well represented from the Canal Zone in various herbaria.

This is the first record of this species from Tolima (Colombia) and Mosquitea (Honduras).

2. Erythrina crista-galli L. Mant. 99. 1767.

Brazil: Mato Grosso: mun. Rio Brilhante, Rio das Araras, Hatschbach 25249.

This is the first record of this species from Mato Grosso.

3. Erythrina falcata Benthham in Mart. Fl. Bras. 15(1):172. 1859.

Brazil: Rio de Janeiro: Serra dos Orgaos, Brade 16406 (GH); Santa Catarina: L. B. Smith & R. Reitz 12558 (mun. Aguas de Chapecu), 12729 (mun. Itapiranga), 12945 (mun. Concordia).

4. Erythrina dominguezii Hassler, Physis 6:123. 1922.

Brazil: Mato Grosso: Ratter & Ramos 226 (K). Paraguay: Teague 248 (BM). Bolivia: Beni: Trinidad, alt. +250 m, E. Werdermann 2460 (MO).

The second record of this species from Paraguay. New collections of this species from Mato Grosso (Brazil) and Santa Cruz (Bolivia) where its range approaches that of E. verna would be welcome.

5. Erythrina ulei Harms, Verh. Bot. Ver. Brand. 48:172. 1970.

Brazil: Para: basin of Rio Tocantins, Serra Buritirama, Murça Pires & R. T. Belem 12589 (IAN); Rondonia: basin of Rio Abuna, cachoeira de Dardanelos, N. T. Silva 3664 (IAN). Peru: Amazonas: basin of Rio Huampami, Berlin 232, Rubio Kayap 887.

This is the first record of this species from Amazonas (Peru).

6. Erythrina verna Velloso, Fl. Flum. 304. 1825.

Brazil: Acre: Seringal Boa Agua, Murça Pires & N. A. Rosa 13773 (IAN).

The common name of this species, "Mulungu," is obviously of African origin. E. abyssinica in Ndolo, Zambia, is called "Mulunguti."

7. Erythrina poeppigiana (Walpers) O. F. Cook, Bull. U. S. Dept. Agr. Bot. 25:57. 1901.

Panama: Darien: slopes of Cerro Pierre, alt. 200-500 m, Al. Gentry 4906, 7045a. Venezuela: Barinas: Reserva Forest. de Caparo, alt. 2000 m, H. Jimenez 1297, Breteler 4517 (MER) (near Barinas, secondary forest), H. Rodrigues C. & C. A. Perez 2698 (MER) (Cedeno, alt. +300-400 m). Colombia: Putumayo: Puerto Limon, Plowman 2194. Peru: San Martin: San Martin, 330 m, Ch. M. Belshaw 3254 (K); Amazonas: basin of Rio Genepa, Berlin 270. Ecuador: A. Delgado 113 (MO).

This is the first record of this species from Amazonas (Peru).

8. Erythrina suberosa Roxburgh, Fl. Ind. 3:253. 1832.

India: Assam: Garo Hills, alt. +660 m, Thakur Rup Chand 2933 (L); U. P.: Dehra Dun, Bhattacharya 14804 (L).

12. Erythrina arborescens Roxburgh, Pl. Coromandel 3:14, pl. 219. 1819.

India: Darjeeling, H. Ohashi et al. s.n./1972 (alt. +1650 m), s.n./1972 (alt. +2200 m); Central Nepal, H. Kanai et al. s.n. (GH); Assam: Khasi Hills, Walter N. Koelz 23535 (L) (alt. +1300 m), Thakur Rup Chand 7219 (L) (alt. +2000 m), 8173 (L) (alt. +2000 m). China: Szechwan, Kuan & Wang 1580 (GH).

13. Erythrina subumbrans (Hasskarl) Merrill, Philipp. Jour. Sci. Bot. 5:113. 1910.

Ceylon: Nuwara Eliya Distr., Maxwell 1009 (MO). Thailand: savannah, alt. 100 m, A. F. G. Kerr 18265 (L). New Guinea: Hollandia: alt. 1600 m, BW 12536 (L). Samoa: Island Tututla, montane forest, L. S. Dutton 7 (US).

This is the first collection I have seen from New Guinea.

14. Erythrina breviflora Alph. DeCandolle, Prodr. 2:413. 1825.

Mexico: Michoacán: Breedlove 18717 (CAS); Jalisco: Breedlove 18667 (CAS); Mexico: 7-1/2 mi NE of Temescaltepec, Dunn, D. B., & Don Dunn 18919; Guerrero: vicin. of Omiltemi, S. S. Tillett 637-147.

15. Erythrina edulis Triana; M. Micheli, Jour. de Bot. 6:145. 1892.

Panama: Chiriquí: M. Nee 10624 (MO) (on coffee plantation). Colombia: Cundinamarca: 21.5 km NW of Villeta, Arthur S. Barclay et al. 3692. Ecuador: Tungurahua: alt. +1570 m, MacBryde 665; Los Ríos: Al. Gentry 9650 (MO), Dodson & Tan 5334, MacBryde 946; Azuay: MacBryde 446 (4.3 km NE of Giron, alt. +2280 m), 454 (14.7 km S of Giron); Cotopaxi: at Pilalú, alt. +2320 m, MacBryde 561; Loja: near Loja, alt. +2060 m, MacBryde 645; Napo: MacBryde 848 & 860 (near Baeza, alt. 1830-1960 m), MacBryde 863 & 1493 (near Cuyujúa, alt. 2350-2500 m), T. Plowman et al. 3923 (Canton Quijo, +2100 m); Chimborazo: 5.6 km W of Pallatanga, MacBryde 694.

This is the first record of this species from the province of Cotopaxi.

17. Erythrina polychaeta Harms, Notizbl. Bot. Gard. Berlin 9:295. 1925.

Mature leaflets of this species as well as of the related E. schimpffii are reticulate-ceriferous beneath, whereas those of E. edulis appear to be not reticulate-ceriferous but rather minutely scurfy. Additional collections of mature leaves of E. edulis are needed. Although we have numerous collections of E. edulis in the herbarium, we have almost no specimens with mature leaves. This is because flowers and leaves in this species are contemporary.

18. Erythrina schimpffii Diels, Bibl. Bot. 116:96. 1937.

Ecuador: Bolívar: alt. +1270 m, MacBryde 568.

19. Erythrina montana Rose & Standley, Contr. U. S. Nat. Herb. 20:179. 1919.

Mexico: Aguas Calientes: Rodman & Schnell 1 (GH).

20. Erythrina leptorhiza Alph. DeCandolle, Prodr. 2:413. 1825.

Mexico: 3 km W of Tenango del Aire, Pineda 734 (CAS).

21. Erythrina horrida Alph. DeCandolle, Prodr. 2:413. 1825.

Mexico: Oaxaca: alt. +2400 m, G. L. Webster & Gary J. Breckon 15324 (GH).

- 22a. Erythrina herbacea L. subsp. herbacea. Erythrina herbacea L. Sp. Pl. 706. 1753 sens. str.

Mexico: Tamaulipas: Sierra de Tamaulipas, NNW of Aldama, Dressler s.n. (1878) (CAS).

Twenty-two collections of this subspecies from the U. S. A. not seen by me before and deposited at Duke were examined. They are not cited here, as this plant, as represented in the U. S. A., is well known. Specimens are from Florida (9 collections), Mississippi (3), Louisiana (3), South Carolina (2), Alabama (1), and North Carolina (4). Collections from North Carolina are of interest, as they are near the northern limit of the range of this subspecies. Two of these collections are from Brunswick Co., one from Carteret and one 15 mi N of Charleston.

- 22b. Erythrina herbacea L. subsp. nigrorosea Krukoff & Barneby, Phytologia 25(1):6. 1972.

Mexico: Veracruz: Chiang 95 (GM), Isabel Kelly 121 (DUKE).

23. Erythrina standleyana Krukoff, Brittonia 3:301. 1939.

Mexico: Campeche: vicinity of Xpujil, John Shepherd 156 (F). Belize: Croat 23854 (MO) (Gracie Rock, 1-1/2 mi S of mi 22 on Western highway, limestone outcrops prevalent), John D. Dwyer 11052 (frts - June 8, 1973) (Belize District, mi 22 on Northern highway), Al. Gentry 8016 (MO) (Stann Creek District, Cockscomb Mountains).

24. Erythrina flabelliformis Kearney, Trans. N. Y. Acad. 14:32. 1894.

Mexico: Durango: Rio Mezquital, alt. +1400 m), O. H. Soule 2109 (MO).

Several collections of this species from the U. S. A. were examined. They are not cited here, as this plant, as represented in the U. S. A., is well known.

25. Erythrina coralloides Alph. DeCandolle, Prodr. 2:413.
1825.

Mexico: J. Gregg 586 (MO); Mexico: Bourgeau 1188 (K);
Nuevo Leon: Sierra Madre Oriental, 1900 m, F. G. Meyer & D. J.
Rogers 2895 (MO).

26. Erythrina aff. coralloides Alph. DeCandolle.

Mexico: Jalisco: collector undesign. 57 (PH). Previous
three collections from Jalisco are discussed in Suppl. VII.
Present collection has pink standard and the wings shorter than
the keel, but auricles of keel are not sagittately produced
backward.

Under E. coralloides, we previously discussed the remark-
able tree, possibly of hybrid origin (Krukoff 1970-132),
collected near Buena Vista between Juquilpan and Quiroga in the
State of Michoacan. The only collection of typical E. coral-
loides from the State of Jalisco (Krukoff 1970-129) is from a
small tree planted near a school.

29. Erythrina goldmanii Standley, Contr. U. S. Nat. Herb.
20:181. 1919.

Berlin, Breedlove and Raven (Principles of Tzeltal Plant
Classification, p. 3, 1974) suggest that this species is an
endemic, confined to the Central Depression drained by Rio
Grijalva, in the State of Chiapas, Mexico, an area +200 km long
and +70 km wide with xeric vegetation completely surrounded by
most densely forested mountain area (rainfall +800 mm).

New collections extend its range to the Pacific Coastal
Plain in Chiapas where it is the most frequently found species
of this genus. See various collections made along the recently
opened highway from Tapachula to Arriaga and Las Cruces
(Suppl. V, p. 259).

30. Erythrina caribaea Krukoff & Barneby, Phytologia 25:9.
1972.

Mexico: Oaxaca: near the border with the State of
Veracruz, Krukoff 1970/84 (F).

31. Erythrina folkersii Krukoff & Moldenke, Phytologia 1:286.
1938.

Belize: Stann Creek District: Al. Gentry 7884; Cayo
District: Belmopan, Dwyer 12714 (MO). Guatemala: Izabal:
Peter Raven & Gregory 606 (CAS), S. Snedaker E-163 (GH).

33. Erythrina smithiana Krukoff, Brittonia 3:323. 1939.

Ecuador: Guayas: 1.3 km N of Manglaralto MacBryde 690;
Loja: near Catacocha, alt. +1790 m, MacBryde 617.

36. Erythrina chiapasana Krukoff, Brittonia 3:304. 1939.

Guatemala: Huehuetenango: cumbre above town, Krukoff 1974/8.

41. Erythrina chiriquensis Krukoff, Brittonia 3:322. 1939.

Nicaragua: Matagalpa: Cordillera Central, Antonio Molino R. 20547 (in clearing of forest at El Porvenir, trees 3-5 m), L. O. Williams & Antonio Molina R. 42774 (Dec. 5, 1973 - flrs) (cutover and virgin montane cloud forest, alt. 1400 m, road to Aranjuez, trees 5-10 m, common, Molina & Williams 7 (tempor. number) (Dec. 3, 1975 - flrs) (cutover forest near Aranjuez, trees 5 m, flrs brilliant red). Panama: Chiriqui: Edwin L. Tyson 5823 (DUKE), Croat 26377 (along highway between Volcan and Cerro Punta), S. Mori & J. Kallunki 5664 (MO) (Cerro Punta, 2-1/2 km SE of town), Mireya D. Correa A. 1346 (MO) (Cerro Punta, alt. +2000 m).

This is the first record of this species from Nicaragua. It has been known previously from a single locality (Cerro Punta) in Panama. All collections from Nicaragua are from a single locality.

42. Erythrina macrophylla Alph. DeCandolle, Prodr. 2:411. 1825.

Guatemala: Guatemala: Harmon & Dwyer 3223 (MO);
Huehuetenango: Jocaltenango, near town, Krukoff 1974/4.

43. Erythrina guatemalensis Krukoff, Amer. Jour. Bot. 28:688. 1941.

Guatemala: Huehuetenango: Barillas, Krukoff 1974/2.
Honduras: Morazán: L. O. Williams & Antonio Molina R. 12809 (flrs - May 21, 1947) (cult. at El Hatillo, alt. +1350 m) (EAP); 13723 (sterile - Feb. 20, 1948) (San Juancito, alt. 1800 m, trees 6 m, cloud forest area) (EAP); 17451 (sterile - March 24, 1951) (San Juancito Mountain, edge of cloud forest, alt. 1800 m) (EAP); Antonio Molina R. 51 (flrs - Nov. 29, 1975) (cloud forest, vicinity of Presa La Tigra, montane La Tigra SW of San Juancito, alt. 1800 m) (EAP); Krukoff 1976/1 (Jan. 1976) (cloud forest, vicinity of Presa La Tigra, mountain La Tigra, SW of San Juancito, alt. 1800 m).

This is the first report of this species from Honduras. I was waiting for good flowering material before naming the specimens collected prior to 1975. On my recent trip to Central and South America, I stopped in Honduras and examined Molina 51 collected recently, and then I made a special trip to the Presa La Tigra. Several very large trees were found on the immediate shore of a creek, and they were in flower.

The five collections of this species from Honduras cited above are from a single locality.

44. Erythrina globocalyx Porsch & Cufodontis, Arch. Bot. Sist. Fitog. & Genet. 10:35, pl. 1. 1934.

Costa Rica: San José: Bajo de Hondura, L. J. Poveda 579 (CR).

49. Erythrina lanceolata Standley, Contr. U. S. Nat. Herb. 17:432. 1914.

Honduras: Morazán: alt. +1500 m, Morton 7343 (US), Krukoff 1976/21 (slopes of mountain La Tigra); El Paraíso: Cordillera Dipilto, alt. 1200 m, L. O. Williams et al. 42252 (EAP). Nicaragua: Matagalpa: Cordillera, near Santa Maria de Ostuma, alt. 1200 m, Antonio Molina R. 15 (EAP). Costa Rica: Puntarenas: Sergio Salas S-672 (CR), L. J. Poveda s.n. (22/9-75, (CR) (Península de Osa).

This is the first record of this species from Puntarenas.

50. Erythrina costaricensis M. Micheli, Bull. Herb. Boiss. 2:445. 1894.

Costa Rica: Limón: J. M. Greenman 5267 (DUKE). Panama: Panama: Cerro Campana, alt. 800-1000 m, Al. Gentry 7045a; Canal Zone: Robin Foster 1409 (DUKE), 1437 (DUKE), 2025 (DUKE), Helen Kennedy 1890 (Rio Agua Salud) (MO), S. Mori & Kallunki 2044 (N along Rio Agua Salud), 2639 (MO); Colon: Helen Kennedy 2448a (MO) (near Portobelo), 2776 (MO) (near Peluca), S. Mori & J. Kallunki 3690 (Rio Guanche).

This is the first record of this species from Colon.

52. Erythrina americana Miller, Gard. Dict. ed. 8, No. 5. 1768.

Mexico: Gomez Friaz Canyon, Duke M3582 (MO).

53. Erythrina berteriana Urban, Symb. Ant. 5:370. 1908.

Belize: Toledo, (cult ?): Dwyer 11148 (MO). Guatemala:

Escuintla: near Escuintla, Harmon & Dwyer 2983 (MO). Honduras: Copan: 3 km NW of Copan, alt. +333 m (EAP); Morazán: slopes of mountain La Tigra, alt. +1200 ft, Krukoff 1976/3. Nicaragua: 4 mi N of Esteli, Dwyer et al. 474 (MO); near Boaco, alt. 200-500 m, John T. Atwood 3466 (MO), 5402 (MO). Costa Rica: Puntarenas: 7 mi SW of Rio Claro, J. Vaughan et al. 623 (MO); Guanacaste: 5 km SW of Liberia, Paul A. Opler 1680 (MO); Heredia: San Luis, L. J. Poveda 196 (CR). Panama: Panama: La Jagua, Sidney McDaniel 10332 (MO); Canal Zone: Alex Lasseigne 4286 (MO); Darien: Isla Saboga, Duke 10366 (3) (MO).

54. Erythrina rubrinervia H. B. K. Nov. Gen. & Sp. 6:434. 1824.

Venezuela: Mérida: La Chorrera, alt. 1600-1900 m, H. Rodriguez C. 015 (MER). Colombia: Cundinamarca: Dwyer 8122 (Fusagasugá), Arthur S. Barclay et al. 3585 (US) (alt. +2050 m), H. García Barriga 20161 (US) (Sasaima, alt. +1200 m), 20390 (US) (Villa de Leyva), J. M. Duque 3277 (carretera entre La Aguadita y Fusagasugá, alt. +1800 m).

56. Erythrina salviiflora Krukoff & Barneby, Phytologia 25:14. 1972.

Guatemala: Suchitepeques: Finca Naranjo, Krukoff 1974/3.

56a. Erythrina santamartensis Krukoff & Barneby, sp. nov., calycis post vexillum profunde recessi ore obliquo E. rubrinerviam H. B. K. arcte simulans sed foliolis inferne haud ceriferis carinaeque petalis inter se ab initio liberis facile distinguenda. Fig. 1, page 356.

Colombia: Departamento del Magdalena: Sa. Nevada de Sta. Marta, in next quebrada E of Quebrada Indiana, near the water, +1350 m, near 10°58'N, 73°58'W, 29.VIII. 1972, J. H. Kirkbride, Jr. 1966. Holotypus, NY; isotypus, US.

Trees 4.5-11 mm tall, glabrous except for minutely puberulent petioles, rachis of inflorescence, and calyx. Leaves 2-4 dm long; petiole 7-18 cm long; leaf-rachis 3-4 cm long; stipels +1.5 mm long; leaflets thinly chartaceous, ovate-acuminate, 7-20 x 5-11.5 cm, when dry olivaceous above, slightly paler but not ceriferous beneath. Racemes axillary to living leaves, the loosely few-flowered axis 3-7 cm long; flower-buds ellipsoid, deflexed before anthesis; calyx red, cylindric, slightly dilated upward, very obliquely truncate at orifice, the tube 17-19 mm long on carinal side, 12-14 mm long behind the standard; standard erect, oblanceolate, 5-6.5 x 1.4-1.8 cm; wings and keel 5.5 mm long, the wings oblong, emarginate, the blades of the keel separate even in bud, narrowly imbricated by their abaxial margins, in outline semi-ovate-acuminate, in lower half transversely

dilated and marginally involute.--Fig. 1 (Kirkbride 1966).

First collected in 1898-99 by H. H. Smith (No. 703) at 2000-2500 ft on the slopes of Sierra Nevada de Santa Marta near Jinacasaca and referred in the monograph (1939, p. 308) to E. rubrinervia, very similar in the form of the calyx. With the acquisition of new and better material, E. santamartensis emerges as distinct from all species of sect. Erythrina with comparable calyces in the non-ceriferous foliage, and further from all of these but E. salviiflora, endemic to Guatemala, in having keel petals free even in vernation.

58. Erythrina gibbosa Cufodontis, Arch. Bot. Sist. Fitog. & Genet. 10:34. 1934.

Costa Rica: Alajuela: La Paz de San Ramon, Poveda 747 (MO); Puntarenas: 6 km S of San Vito de Java, Los Cruces Trop. Bot. Gard. 63-132. Panama: Veraguas: E. A. Lao 514 (MO) (Alto Piedra Sta. Fe, +1200 m), Croat 27335 (MO), S. Mori & J. Kallunki 2524, 3125 (MO); Coclé: El Valle de Anton, alt. +100 m, Helen Kennedy 3050 (MO).

This is the first record of this species from Veraguas.

59. Erythrina amazonica Krukoff, Brittonia 3:270. 1939.

Brazil: Para: Ilha do Marajo, proximo a Vila Mocara, campo cerrado, Bento S. Pena 66 (26/8-1969- flrs) (IAN); Maranhão: N. T. Silva 4238, 4239. Ecuador: Napo: Santa Cecilia, near Munozlandia (on Rio Aguatico, alt. +340 m), MacBryde & Simmonds 1466; Pastaza: Puyo, alt. +960 m, MacBryde 1518.

This is the first record of this species from Ecuador.

62. Erythrina mitis Jacquin, Hort. Schoenb. 2:47. 1797.

Venezuela: Falcon: Democracia, near Buruica, alt. 560-620 m, Agostini 1010.

This is the first record of this species from the State of Falcon.

65. Erythrina eggersii Krukoff & Moldenke, Phytologia 1:289. 1938.

Puerto Rico: 10 mi W of Bayamon, Elbert L. Little, Jr. 21688.

73. Erythrina humeana Sprengel, Syst. 3:243. 1826.

South Africa: Cape: Bathurst Dist., Bayliss 5552.

In reducing E. princeps A. Dietrich to this species, the author (Codd, L. E., Bothalia 2(part 3):269. 1974. obviously didn't see that we had already done so (Lloydia 37:408. Sept. 1974). It is very satisfactory that Codd considers that E. raja Meisner and E. hastifolia are not worthy of separate taxonomic status.

74. Erythrina zeyheri Harvey, Fl. Cap. 2:236. 1862.

Nyassa: Kuimbila, A. Stolz 2266 (L).

75. Erythrina acanthocarpa E. Meyer, Comm. Pl. Afr. Austr. 1:151. 1836.

South Africa: Oudtshoorn District (cult.), Goldblatt 2966 (MO).

77. Erythrina brucei Schweinfurth, Verhand. Zoo-Bot. Gesell. Wien 18:653. 1868. et auct. plur., pro majore parte, leguminibus seminibusque exceptis; emend. Gillett, Kew Bull. 15:428. 1962.

Ethiopia: W. J. J. O. de Wilde 9884 (MO) (+15 km SE of Harar, savanna), coll. undesign. s.n./June 2, 1972 (US) (Addis Ababa).

78. Erythrina vogelii Hooker f., Niger Flora 307. 1849.

Cameroun: km 5 of Mogode-Mokolo road, alt. +1200 m, dry open woodland, Leeuwenberg 7576.

This is the first collection seen by me from Cameroun.

79. Erythrina senegalensis Alph. DeCandolle, Prodr. 2:413. 1825.

Upper Volta: Deux Bale Nat. Park, J. Sihonen 61 (MO).
Ghana: Tamale-Yendi road, A. A. Enti FE 1213 (MO).

85. Erythrina decora Harms in Engl. Jahrb. 49:441. 1913.

South West Africa: R. Seydel 369, 369a, H. Haelbich 1679d (L).

93. Erythrina sigmoidea Hua, Bull. Mus. Hist. Nat. Par. 3:327. 1897.

Cameroun: Leeuwenberg 7549 (km 5 of Mogode-Mokolo Road),
Wilde-Duyfjes 2582 (between Bangwa and Bangante).

94. Erythrina latissima E. Meyer, Comm. Pl. Afr. Austr. 1:151.
 1836.

Rhodesia: Plowes 2338 (MO).

95. Erythrina abyssinica Lamarck, Encycl. Bot. 2:392. 1788;
 DC Prodr. 2:413. 1825.

Zaire: Kongolo, Adele Lewis Grant 4032 (MO). Zambia:
 Central Province: Lusaka District, +1300 m, Arne Strid
s.n./1972. Ethiopia: about 170 km SSE of Addis Ababa, W. J. J.
O. de Wilde et al. 6669 (MO). Kenya: R. E. Perdue & S. P. Kibuwa
9336 (MO) (Nyanza), G. Davidse 7105 (MO) (near Lessos, alt.
+2000 m). Tanzania, near the Kambisama River, alt. +1530 m,
H. M. Richards et al. 26186 (MO). Mozambique: Zambezia,
T. Muller & G. Pope 1945 (MO). Malawi: Jean Pawek 5919 (MO) (N.
 Province, alt. +1500 m), 7386 (MO) (Mzimba District, alt.
+1500 m), 7591 (MO) (Nkhata Bay District, alt. +2000 m).

96. Erythrina variegata L. Herb. Amboin. 10. 1754; Amoen. Acad.
 4:122. 1759.

Ceylon: Amparai District: at sea level, R. H. Maxwell &
M. Jayasuriya 756, 830. India: Terr. Canara, prope Mangalor,
R. E. Hohenacker 539 (L).

97. Erythrina tahitensis Nadeau, Enum. Pl. Tahiti 80. 1873.

Mr. H. S. Mackee called my attention to the fact that the
 given names of Parcher are Jean - Armond - Isidore.

98. Erythrina euodiphylla Hasskarl, Hort. Bogor. 178. 1858.

Java: Cardoso s.n. (L), R. van der Veen s.n. (July 1975 -
 flrs) (MO) (East Java, Baluran).

Peter Raven made a determined effort to have this species
 collected to clarify certain uncertainties connected with this
 rarely collected Erythrina. It has been reported as having all
 petals green and leaves fetid when fading (Baker, C. A., & R. C.
 Bakhuizen, von der Brink, Jr., 1963, Flora of Java 1:628. 1963).
 On the basis of this information, Barneby suggested that this
 species is probably pollinated by bats (Phytologia 27:126. 1973).

At Peter Raven's suggestion, R. van der Veen visited the
 game preserve, Baluran in East Java, and found several flowering

trees of this species. The flowering had just started on July 3. The flowers proved to be not green, but a definite pale orange when looking up the tree. The flowers are odorless in daytime and in the evening. Van der Veen is convinced that pollination is probably done by honey birds which are rather common in Baluran. We are now waiting for the seeds which will be useful in checking on amino acids and chromosomes. We also must establish this tree in Hawaii and South Africa, as it is an endangered species.

99. Erythrina vespertilio Bentham in Mitch. Jour. Trop. Austr. 218. 1848.

Australia: Queensland: L. S. Smith 12671 (L); Northern Territory: Balgooy & Byrnes 1344 (L).

101. Erythrina merrilliana Krukoff, Jour. Arnold Arb. 20:227. 1939.

New Guinea: Moroba Dt., alt. +1333 m, rain forest, Dep. Forests Lae NCF 35194 (L), Madang Dt., alt. +40 m, Dep. Forests Lae, NCF 46673 (L).

102. Erythrina velutina Willdenow, Gest. Nat. Freunde Berlin Neue Schr. 3:426. 1801.

Brazil: Amazonas: Manaus, km 9 da Br 17 estrada de Sto Antonio (cult.?), Inst. Nac. Pesq. Amaz. 1960 (INPA); Pernambuco: munic. São José de Egípto, Gottesberger s.n. (1974). Ecuador: Guayas: 2.9 km W of El Progreso on road to Salinas, MacBryde 670; Galapagos Islands: Fosberg & Dawson 44917 (US) (Culpepper (Darwin) Island), Fosberg 44944 (US) (Wenman (Wolf) Island).

104. Erythrina burttii Baker f., Jour. Bot. 70:254. 1932.

Tanzania: W. Busse 288 (L).

Hybrids

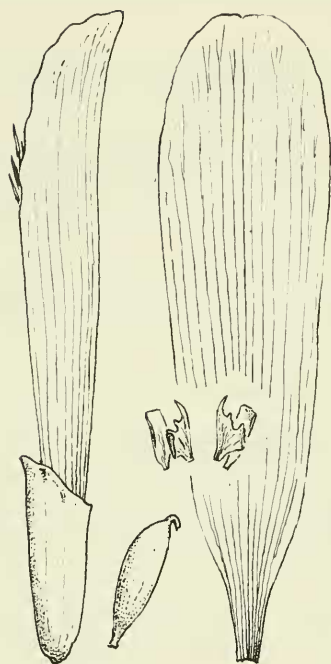
7. Erythrina x sykesii Barneby & Krukoff, Lloydia 37:447. 1974.

Australia: Queensland: M. M. J. v. Balgooy 1534 (L).

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santamartensis

Fig. 1. Erythrina santamartensis Krukoff & Barneby